REPORT

OF A

SPECIAL COMMITTEE

OF THE

Philadelphia Board of Trade,

IN RELATION TO THE

LIFE-SAVING STATIONS,

UPON THE COAST.

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RESOLUTION.

November 28, 1859.

At a stated meeting of the Philadelphia Board of Trade, Nov. 28, 1859, on motion

Resolved, That the Committee on LIGHTS AND HARBORS be authorized to confer and co-operate with the Board of Underwriters of Philadelphia, in any inquiries into the nature and efficiency of the apparatus supplied to the life saving stations established by Congress, for the purpose of relieving shipwrecked persons and vessels, on the coasts of New Jersey, and Long Island. *And particularly* into the character of the Life Boats, the Mortars for throwing lines, and their suitableness for such purposes; the Life Cars, and the means of transportation, and the personal equipment provided for the same.

And further, That the said Committee shall report any means whereby any of the said apparatus may be experimented upon, and perfected, with a view to the more effective equipment of the said stations.

Also that said Committee shall have power to act, in conjunction with the Board of Underwriters—or to recommend any course of action to this Board—whether by memorial to Congress, or otherwise, upon the same.

And generally to report the facts to this body.

On motion of Mr. Richard Wood,

Resolved, That Mr. Geo. N. Tatham be joined with the said Committee.

REPORT OF THE SPECIAL COMMITTEE

OF THE

PHILADELPHIA BOARD OF TRADE.

The Committee of the Board of Trade to whom were referred the resolutions of the board, relative to the government life-saving stations on the coasts of Long Island and New Jersey, and to the character of the life boats, mortars and other apparatus, and equipment provided for the same,

Respectfully Report,

That we have had several conferences with the Board of Marine Underwriters of this city, and with their special Committee upon the subjects referred to us; and after hearing various statements, and verbal and other evidence, besides examining many publications, we have agreed upon a course of action, in concurrence with the Board of Underwriters. We accordingly submit a statement of facts,—together with a copy of a memorial proposed to be offered to the National Legislature, and an Act of Congress to be applied for.

Within the last eighty years, the subject of life boats has attracted attention in Europe, and a sketch of their history may be of value.

The first invention of an immergible boat in England appears to have been that of Lionel Lukin, patented in 1785. (Repository of Arts, vol. 3.)

In 1789, after the occurrence of some marine disasters, premiums were offered for the best model of a life boat, and that of *Henry Greathead* obtained the preference. It is particularly described in Rees' Cyclopœdia, vol. 4, article "Boat."

Greathead's life boat was 30 feet long, 10 feet beam. She had great sheer on top, and a curved keel. She was lined inside with cork, 12 inches thick, and had cork fenders outside. Her weight must have been very great. She was not a self-righting boat,—but, on many occasions she performed such good service, that Parliament, in 1802, voted to Mr. Greathead £1,200, as compensation,—and he received other rewards. For nearly sixty years this may be regarded as the model British life boat. There were indeed other inventions, such as that of Mr. Bremmer in 1800; of Mr. C. Wilson in 1807, and of Gabriel Bray, in 1818; but, public attention was little drawn to the subject until 1824, when numerous shipwrecks and loss of life occurred upon the British coasts. In a South Shields life boat twenty pilots were drowned.

On the 4th March, 1824, the "Royal National "Institution, for the preservation of life from ship-"wreck," was established by distinguished philanthropists, whose liberality has since been nobly supported by the British public. Among the private subscriptions may be noticed one of £10,000 sterling. In 1858, the income of this Society is stated to have been £7,803. It has distributed in rewards about £12,000. It has spent for life boats and other apparatus, a sum approaching £30,000; and it has directly or indirectly contributed to the saving of more than eleven thousand lives.* The

* Since 1852 the Society has published a Monthly Journal.

Office of the Royal National Shipwreck Institution, No. 20, John St., Adelphi, London; Richard Lewis, *Secretary*, to whom letters should be addressed.

British Board of Trade, since 1854, has afforded important aid, by contributing to the manning and exercising of the boats, and defraying expenses connected with actual service. In 1851, the Duke of Northumberland, President, offered a prize for the best model or design of a life boat, and no less than 280 plans or models were presented. Mr. James Beechings obtained the premium. His boat was called the "Northumberland prize boat." She was 36 feet long, 9 feet 6 inches beam. Sheer on top, 36 inches. Straight iron keel of 10 cwt. Her extra buoyancy was due to air cases. She had cork fenders, and copper discharging tubes. Her rig was a lug fore and mainsail. Her total weight was 7,502 lbs. She would carry seventy persons. Her cost was £250 sterling.

Boats upon this plan were constructed for Ramsgate and Boulmer. Two others, built, with some modifications, by *Mr. Beechings*, for Lytham and Rhyl, were upset in a very heavy sea, "chiefly from imprudently "carrying sail."

The President of the Institution thereupon appointed a Committee to decide upon the relative merits of the models. They employed Mr. James Peake, of Woolwich Dockyard, who, after a careful examination of all the designs, finally, in 1852, produced the "Percy life boat." It was built at the expense of Government. It has been highly approved, and is regarded in England "as their "National life boat, and the best that was ever produced "in any country." This boat is adopted at a large number of their stations on the coast.

Peake's "Percy" life boats have been built, for the most part, of two sizes, 27 and 30 feet long; 7 feet 6 inches, and 8 feet 8 inches beam; depth, 3 feet 6 inches; rowing 8 to 12 oars, double-banked. The earliest patterns were clinker built, but they are now

made of fir or larch, on the diagonal principle of double planking, without timbers. The keels are straight, and of iron, weighing 5 to 7 cwt. They have tubes, with self-acting valves, for discharging water through the bottom. Extra buoyancy is obtained by cork packing, 12 inches deep, between the floor and the kelson, and by light detached cork or air cases under the seats, at the sides, and in the head and stern sheets. These, with the weight of the iron keel, afford self-righting properties. These boats would carry from 42 to 60 persons; their entire weight is from 38 to 46 cwt., say 4256 to 5152 lbs.

The actual cost of the larger boat at one of the British dock-yards was £85 sterling.

It appears that in consequence of the upsetting of some of the safest boats in seas unusually tempestuous, it became necessary to supply the crews with life belts. Capt. Ward, R. N., after many experiments invented a cork belt, which does not interfere with the movements of the wearer; it protects the body from blows, and is a warm covering in cold weather. It has effective buoyant power. 800 of these belts have been supplied to the crews of the Royal Institution: and the coxswains of the boats are held responsible for any man who goes upon wreck service without his life belt on.

The British station houses are usually built of stone, and are about 17 feet wide, by 40 feet long. The total cost of the equipment of a station house, with complete apparatus of the most approved description, is stated to be about £400 sterling.

In the construction of British life boats, the points considered, appear to be, 1. Extra buoyancy; 2. Self-relief; 3. Ballasting; 4. Self-righting; 5. Stability; 6. Speed; 7. Stowage, and 8. Strength of materials.

It seems to be agreed that if sufficient buoyancy can

be obtained by *cork*, it is far preferable to *air cases*, as not being liable to accident. It is protected by a light wooden casing, or by gutta percha, to keep the water out; so that if bilged against a rock, or a vessel's side, still the craft would float. It is alleged that air cases built into the boat cannot be depended upon for a single year. "There is reason to believe that there does not "exist a complete air or water-tight case (undetached) "in any life boat that has been six months in use in "Great Britain." Detached air cases may be better, but *all* require extreme caution. It is stated that india rubber and gutta percha are liable, not only to be punctured or torn, but to lose their tenacity, and to decay from dampness. Metallic cases do not offer security.

In a life boat laid open at Woolwich, several holes were found half an inch in diameter in the copper tubes, previously supposed to be air tight. Copper, like other metals, is all the more liable to corrode when exposed to sea water. It is obvious that air cases of zinc, or tin, would be treacherous and utterly unreliable.

In 1837, Capt. Rorie, R. N., proposed (instead of copper cases) the large trunks of bamboo canes, naturally jointed and divided, air tight and strong.

It is urged by the British constructors, that after leaving the necessary room for crew and passengers, the whole space within a life boat, along the sides, should be occupied by buoyant cases, or compartments. So that, on shipping a sea, the water will be confined amidships, and rather act as ballast, until discharged,—instead of falling over to the lee side.

Additional facts may be procured, and working drawings may be found, where most of these particulars have been obtained from "*Tomlinson's Cyclopædia of Useful Arts*," a recent London work; from the *Encyclopædia Britannica*, Vol. 13, p. 441, &c.; from articles

in the *United Service Magazine*, for September and October, 1857,—and from a paper (believed to have been written by *Sir David Brewster*) in the *North British Review*, for November 1859.

In the year 1855, a life boat upon the English plan was built at the Philadelphia Navy Yard, for the Treasury Department,—she was 30 feet long, near 10 feet beam, 3 feet 6 inches in depth; she was filled with chambers, stuffed with cork, and had copper tubes for discharging water. She is said to have cost a large sum. But she was found to be too heavy and unwieldy. She was pronounced a failure; was ripped up, altered, and finally sent to California.

It is evident that whilst these heavy English life boats may be well adapted to the deep, short seas, and iron-bound coasts of Great Britain, where abundant force to work them may be always closely at hand, they would be found unwieldy and unsuitable in the shoal waters, on the low sandy shores, and comparatively deserted coasts of the United States.

All vessels must depend upon the same principles for stability; but, a boat once upset, is *kept so* by any equal or wide *bearings*, especially amidships; also by her *weight;* and if heavy, and much immersed, the *pressure of the atmosphere* will act against the efforts to right her. The heavy British life boats have thick sides and floors, and besides their air casings, they require heavy iron keels, weighing from 5 to 10 cwt., to help the self-righting tendencies.

According to American ideas, in the construction of life boats, lightness is regarded as a cardinal principle. All unnecessary weight is to be avoided. Inside air-casings at the waist are dispensed with. No iron keel is necessary or desirable; but, the boat depends for her self-righting properties chiefly upon her high and buoyant

ends, and the peculiar shape of her bottom. She cannot rest in any other than an upright position.

In American experience, it is alleged to have been found that life and surf boats, well built, of light, but strong and elastic materials, are much more safely and easily transported on shore, and are managed with more facility in the water. They will bear the roughest usage ordinarily encountered, whether on the strand, among the breakers, or alongside of a wreck; and will generally perform better service than heavy boats, constructed upon the old plan, of unyielding and stubborn wood and iron.

Whatever may be our opinions, it is neither the business nor the purpose of this Committee to advocate any particular kind of life boat. Our object is to name some of the principal arguments, and to indicate the field for investigation. For the purpose of saving human lives we want the very best life boat that can be produced.

In the United States our countrymen have not been unmindful of the importance of this subject. The New York Life Saving and Benevolent Association has existed for many years, and has been instrumental in saving hundreds of valuable lives.

Within twelve years past, Congress has made six different appropriations for the establishment of life-saving stations on the coast, and for their equipment with surf boats, rockets, mortars, and other apparatus. These Acts are respectively dated 3 March, 1847; 14 August, 1848; 3 March, 1849; 14 December, 1854: 12 June, 1858, and 3 March, 1859.

Under these Acts (besides at other places) twenty-six station houses have been built on the coast of Long Island, and twenty-eight on the coast of New Jersey. Each of these has a keeper, at a salary of $200 per annum, and a crew of eight men, unpaid. They are subject to two Superintendants (one each for Long Island

and New Jersey) who have the salaries of Inspectors of the Customs. They are appointed and controlled by the Secretary of the United States Treasury.

In New Jersey the houses are 17½ feet wide by 36 feet long. They contain the boats, the life cars, and apparatus, and are provided with a stove and firewood for the comfort of shipwrecked persons. These houses usually are situated upon the isolated "beaches," or islands, which chiefly form the frontier against the ocean, often entirely obstructing the view of the sea, being commonly at the distance of several miles from the main land.

The station houses are securely locked and barred, and the keepers (holding their offices by the usual political tenure) keep the keys at home, and reside often at many miles distance, on the main land.

A copy of the Inventory of one of these station houses is appended to this Report.

At different times there have now been three sorts of boats furnished to these stations. The first was a metallic boat, with a wooden keel-piece, which being found unsafe, has been generally removed. The second is *Francis'* Metallic Life Boat, 26 feet 6 inches long, 6 feet 6 inches beam, built of corrugated iron. This boat is not self righting, and she has not maintained the favor she at first received. She has been objected to by the surfmen, "by reason of her weight (1500 lbs.), also the liability of her air cells to puncture or fracture, (sometimes by little force, in consequence of rust,) her loss of buoyancy in this condition, and liability to sink end first from under her crew." When in *perfect* order, however, it is claimed, that she is capable of rendering great service.* [See U. S. Treasurer's Report for 1858, Appx., p. 369.]

* In 1855, Francis' Metallic Life Boats were objected to by the British and French Inspectors of the vessels chartered for the transport service. The ships were compelled to provide themselves with wooden boats.

In consequence of the objections made to these boats, Congress was memorialized two or three years ago by the Board of Underwriters and by others, petitioning that the several stations should be furnished with wooden *self-righting life boats*, which had recently been invented and brought into notice, both in Europe and this country.

On the 12th of June, 1858, Congress accordingly made an appropriation for the purchase of the "best "*self-righting* life boats, to be placed on the coast of New "Jersey, and the best life boats for use on the coast of "Long Island."

On the 9th of October, 1858, the Secretary of the Treasury appointed three Commissioners "to recom- "mend to the department for its consideration the life "boat which may be deemed best adapted in *all its* "*conditions* for the saving of human life from shipwreck "on the coast of the United States."

It does not appear that these Commissioners extended their inquiries upon the subject into the opinions and experience abroad. But, after giving public notice, two trials of various American boats took place before them, one at *Spermaceti Cove*, N. J., and the other at *Fire Island*, L. I.

At the first trial, on the 20th of October, 1858, *seven* boats were presented before the Commissioners. One only of these was a *self-righting* life boat, constructed by *R. C. Holmes*. This life boat was 25 feet long, 6 feet 9 inches beam; sheer on top, 25 inches. She contained nearly 800 lbs. of cork in water-tight compartments at her buoyant ends; and she had a water-tank holding 300 lbs. of water. Thus fitted, her total weight was said to be 1,700 lbs. She was pronounced "a valuable "sea life boat, possessing self-righting properties derived "from her sheer, and the relative position of her cork "filled chambers and water-tank." On the other hand,

objections were offered to her "weight, and the quan-"tity of surface exposed to the action of a head wind."*

At the second trial, 17th of November, 1858, *nine* boats were presented to the Commissioners. Four of these were on the *self-righting* principle, namely:

No. 3. *Holmes'* Life Boat, mentioned above.

No. 3½. Another *Holmes'* boat, 23 feet long, 23 inches sheer on top, weighing only 700 lbs. Her air-chambers at the ends being divided horizontally into two, and the lower ones only filled with cork.

No. 9. "*The Empire City Life Boat*," 28 feet long, 6 feet 3 inches beam, 22 inches sheer on top; stated to weigh about 900 lbs. Her air-chambers lined with sheet rubber, or gutta percha at each end, and also under a

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* Holmes' Self-righting Life Boat had been previously brought into favorable public notice. She had been tested in the breakers at Cape May, 21st of August, 1857, before a large committee of merchants, sea captains, pilots, and others, besides hundreds of visitors at Cape Island. Their report, with thirty-eight signatures, is before us.

She was again experimented upon on the 27th of August, 1857, by a Committee of the Philadelphia Board of Marine Underwriters, and by the Board of Marine Surveyors, all old shipmasters. They united in the strongest testimony in her favor.

By order of the Navy Department, she was experimented upon by the officers of the Philadelphia Navy Yard. Their report, 14th of October, 1857, was highly satisfactory.

On the 22d of July, 1858, the Presidents of the seven principal Marine Insurance Companies of Philadelphia urged upon the Treasury Department the adoption of this life boat at the station-houses on the coast.

On the 3d of August, 1858, she was again publicly tried before a large concourse of visiters at Cape Island. A certificate of her performance, signed by Alexander Henry, Esq., Mayor of Philadelphia, and forty-seven others, is before us. In an *unusually heavy surf*, she was repeatedly rowed, by five men, out beyond the breakers, and there, without using oars, she was suffered to be driven back by the sea upon the beach, which she *invariably approached bow foremost, and without shipping water.* It required the strenuous exertions of seven men to upset her in the surf, and then she instantly righted.

Testimonials are produced from Captains Yard and Stellwagen, Com. Inman, and others of the Navy.

A letter from Captain Cram, on the United States Coast Survey, 22d of October, 1859, possesses sufficient interest to be added to this Report. See Appendix.

deck, in compartments extending over the whole bottom of the boat.

No. 10. *Morrell's* Self-righting Life Boat, 26 feet long; an old boat, heavy and strong, fitted with 8 gutta percha air-cells.

The last two boats owed their self-righting properties to the same principles as those of Holmes' life boats. They differed chiefly in details, which may be found stated in the Report.

The Commissioners recommended first, No. 9, "*The Empire City Boat.*" They state, that "Nos. 3 and 10 pos-"sess qualities similar to No. 9, with some modifications." They also recommended No. 2½, "*Bunker's* Surf Boat," (although not self-righting,) for qualities by which, "*in* "*connexion with a boat of greater capacity*, she is calcu-"lated to meet the existing wants of the life-saving "stations." [See Report of Commissioners, dated Nov. 20, 1858, appended to the Report of the Secretary of the Treasury, for the year ending June, 1858, at p. 367, &c.]

The appropriation bill of 1859, calls only for "the best life boats." None of the self-righting life boats thus applied for or recommended, have been supplied to the station-houses under these last acts of Congress. But, *fifty-four* boats, apparently not unlike that numbered 2½ in the Commissioners' Report, have been built, partly in New York and partly at Tom's river, N. J.; and these have been distributed to the station-houses on Long Island and New Jersey.

At the instance of a member of your Committee, two of these boats have been examined at or near stations Nos. 24 and 25, Cape May County, N. J., by four experienced boat builders and practical surf-boat men. They are declared to be of inferior workmanship, and of no value as life boats; an estimate of their cost is given. The statements dated November 22 and 23, 1859, of

Messrs. B. Hall, R. Townsend, S. Springer, and J. W. Gandy, upon the character and value of these boats, are hereunto annexed. They are corroborated by thirty-one prominent and respectable citizens, residing (nearly in sight of those station-houses) at Cape May Court House, under date of 4th of January, 1860, who declare the government boats to be "inefficient and entirely use-"less," as life boats. The testimony we believe to be perfectly reliable. It will further appear by a letter of the Secretary of the Treasury, appended, that the price paid for these boats was $250 each.

The "Beaches" or Islands upon these coasts, which form the barrier against the ocean, are not all inhabited, and few of them could supply much assistance to a wreck. Notice to the mainland, therefore, becomes a principal necessity. Of the coast population, nearly all are surf-boat men, skilful, daring, and accustomed to the breakers. If a shipwreck should occur, and the alarm on shore be given, men will not be wanting. The means of timely notice should everywhere be provided.

The keepers should reside at or near their station-houses. They should be required to be on the look-out in dangerous weather. They should have masts or elevations whence the shores could be seen, and signals be given; and they should be provided with signal-guns, to spread alarm on shore, and to summon assistance.

On the 27th December last, the Schooner *Juliette*, of Dennis, Mass., was wrecked at night, on Hereford Inlet bar, not far from Station-houses Nos. 24 and 25. No assistance to the crew was rendered from the land. Next morning, at ten, they saved themselves in a boat, with a single oar. After six hours' exposure at sea, they were picked up by another vessel, and landed at Cape May.

In a storm, 16th April, 1854, the Ship *Powhatan*, of Baltimore, and the Schooner *Manhattan*, of New York,

were driven ashore at Long Beach, N. J. During twenty-four hours both vessels lay within 100 yards of land. Their people might have been easily rescued, if men and life-boats, mortars and life-cars had been there. But the station-house was five or six miles distant; there were only three or four persons on the island; notice to the mainland could not be given in time. At last, abundant force arrived; but all was over. Both vessels had gone to pieces, and 350 human beings had miserably perished in the waves!

Congress was memorialized, and the Act of Dec. 14, 1854, was passed.

Some few winters since, a Bremen vessel, with nearly 600 passengers and crew, was cast away upon Brigantine Beach. For two whole days this ship lay in the breakers, within 500 yards of land. Her people were seen, and even their voices heard imploring aid. But, on that desolate island, none could help them. The vessel went slowly to destruction, and not an individual attained the shore alive. For months the sea continued to give up the dead.

On Friday night, 19 December, 1856, the packet ship *New York*, with more than three hundred souls on board, was wrecked on Barnegat Beach, not very distant from a station house, but miles away from any dwelling. Next morning two boats were landed, but could not return against the gale. On Sunday, the life boat's crew arrived. After six attempts the line was thrown, and nearly all were landed. But in this desperate service, the life boat was upset. Two of her gallant crew, and six others lost their lives. For a day or two, 300 people had no other shelter than what the station house afforded.

This last case alone would justify the past benevolence of Congress. But, all these instances must show the paramount importance of immediate NOTICE.

The means of throwing a line to vessels in distress has engaged the attention of the Committee.

In 1791, Lt. Bell, Royal Artillery, by means of a mortar and shot, on the principle of the gun-harpoon, threw a deep-sea line about 400 yards. The shot weighed 60 pounds or more, and the mortar 5 or 6 cwt.

In 1812, Capt. G. W. Manby published an Essay on the subject. It engaged the attention of Parliament. His apparatus has been furnished to the British station-houses. Extracts from Capt. Manby's work, with diagrams, may be found at p. 441, &c., in the 13th volume of the Encyclopædia Britannica, now in course of publication. He appears to have tried many experiments to connect the rope with the shot, and to prevent its being burnt or broken. Chains, and other devices, parted in the trial. At last he effected his object by means of some two feet of stout, plaited hide, woven closely. He also devised a barbed shot, which, when thrown over a wreck and hauled upon, would attach itself to the vessel. He advocates a small piece of ordnance rather than a heavy gun. The weight of the shot (rather than the velocity) is relied upon to carry the rope. With a $5\frac{1}{2}$ inch brass mortar, and 14 oz. of powder, Capt. Manby threw 310 yards of deep-sea line. With an 8-inch brass mortar of 700 lbs. he threw near 479 yards of a similar line. Very great care was found necessary in disposing of the coils of the line, preparatory to firing. Many plans, and some of them French experiments, have been published.

It does not appear that Capt. Manby's mortar has ever thrown a line over a wreck at a greater distance than 150 yards. It has, nevertheless, saved many lives, both in Europe and in this country. In 1823, Parliament voted him £2,000, as a reward for his invention.

In 1820, Trengouse threw a mackerel-line 180 yards

by means of an 8-oz. rocket, and 212 yards with a rocket weighing one pound.

M. G. DELAVIGNE used a brass howitzer for throwing the line. The experiments, however, do not appear to have been conducted on a proper scale.

Capt. MANBY'S small, $5\frac{1}{2}$-inch mortars may answer well enough upon the iron-bound coasts of Great Britain, where shipwrecks usually occur close to the land. But upon our sandy shores, where the waters shoal very gradually, and in storms the breakers are of very great extent, vessels of burthen would generally take the ground at great distances from the land, and these mortars would be ineffective, and the life-cars would consequently be useless.

If, as Capt. MANBY proved, a line can be experimentally thrown 479 yards, there ought to be no insuperable difficulty in sending it 600 or 800 yards, or more.

Our station houses are supplied with small $5\frac{1}{2}$ inch (24 lb.) iron mortars, weighing (with their bed-plate) perhaps 100 to 150 lbs. Of course they are without carriages. Some experiments took place with these mortars at stations Nos. 23 and 25 (Cape May County, N. Jersey) which have been reported to us. The ranges obtained were from 150 to 180 yards, and the lines continually parted.

The truth is, that neither the guns, the shot, the lines, nor the means of transportation, are sufficient for our coast. The printed instructions should be more complete. The keepers and crews should be drilled to understand their duties. In Great Britain the rocket and mortar service is performed by the Coast Guard. They are under the orders of the Board of Trade. These men, as well as their life boat crews, are exercised once a

quarter. They are all paid for regular duties, and are liberally rewarded in case of extraordinary service.

This Committee are of opinion that our station-houses should be supplied with Capt. WARD'S life belts in abundance, not only for the boat-men, but also for the use of shipwrecked persons. They might be sent on board, by various means.

Francis' metallic life cars have been supplied to our stations, and are a most valuable addition to the apparatus. Many hundreds of shipwrecked persons have owed their lives to this invention.* Its value is highly appreciated abroad. But its availability always must depend upon first obtaining a communication with a stranded vessel by means of a line and a hawser.

It would afford a field of interesting and valuable experiment for some of our able artillery officers to ascertain the best description of gun, and projectile for this purpose. We believe the guns should be of brass, for several reasons; and that they should be mounted for service on carriages, rather than, like mortars, to be laid on the ground, perhaps in wet places, and under other disadvantages. Some of us are inclined to think that a gun, resembling a mountain howitzer, with a shot, or heavy bolt, and an attachment perhaps like that of a gun-harpoon, might be made available. But all such questions, together with the best sort of lines, and the proper arrangement for firing at great distances, would be legitimate matters for reference to engineer officers of the army; and as these experiments would necessarily be attended with expense, they are properly a subject for the national liberality.

It is hardly necessary to urge that the best instruments and apparatus of every kind ought to be supplied

* In the single case of the ship Ayrshire, wrecked on the coast of New Jersey, in 1850, two hundred persons were rescued by this means.

to all the life-saving stations. There is reason to believe that this could best be accomplished under suitable appropriations by Congress, to be administered by a few responsible parties, such as the Presidents of the Chamber of Commerce of New York, and of the Philadelphia Board of Trade, whose proceedings would be actuated by considerations of the public good alone.

In offering our memorial to Congress, the Committee propose that copies of the same, and of the projected legislation, and of this Report should be forwarded to the NEW YORK CHAMBER OF COMMERCE, the BOARD OF MARINE UNDERWRITERS of that City, the NEW YORK LIFE SAVING AND BENEVOLENT ASSOCIATION, and to any other influential parties in BOSTON, BALTIMORE and elsewhere, asking their co-operation with us in urging this legislation upon the National Councils at Washington.

Respectfully submitted, by the Committee,

JOHN WELSH,
S. MORRIS WALN,
FRANCIS R. COPE,
G. N. TATHAM, *Chairman.*

Philadelphia, January 23, 1860.

INVENTORY

Of articles in Station House No. 24, Seven Mile Beach, Cape May County, New Jersey.

1 Boat or life car wagon,
1 Surf boat (Francis' metallic, 26 feet 6 inches long.)
14 Oars, 16 feet long.
2 India rubber buckets.
2 Boat hooks.
1 Grapnel, or boat anchor, with cable.
1 Francis' life car, of corrugated iron.
1 Manilla 4½ hawser, 150 fathoms.
2 " 2½ hauling lines, 150 fathoms each.
1 Coil shooting line.
1 Shooting line box.
1 Small cast iron mortar, with bed piece.
10 24lb iron balls.
12 Spiral wires,
1 Brass priming wire.
2 Shot hooks.
1 Copper powder magazine.
1 Tin case quick matches.
1 Coil match rope.
1 Match staff.
1 Sand anchor.
1 Bull's eye, strap and hook.
1 Reef tackle, with double and single blocks.
2 Shovels.
1 Hand saw.
1 Nail hammer.
1 Hand axe.
1 Nail gimlet.
1 Spike gimlet.
Nails, half pound.
1 Marling spike.
1 Ball flax twine.
1 Ball spun yarn.
2 Globe lanterns.
1 Match safe, box matches.
1 Oil betty.
1 Ball lamp wick.
1 Gallon can lamp oil.
2 " " paint oil.
½ " " spirits turpentine.
1 Keg white lead, 25lb.
1 " black " "
1 Sponge.
8 Yards India rubber cloth.
1 Bundle oakum.
1 large box stove with pipe.
1 " iron boiler.
1 " tea kettle.
1 Piece of zinc.
1 Cord wood.
2 Paint brushes.

To which has been added, 1859.

1 Wooden surf boat.

Pamlico Sound, North Carolina, Oct. 22, 1859.

Dear Sir,—In reply to your communication just received, I have the pleasure to say that I used, for my party on the U. S. Coast Survey of this Sound, one of "Holmes' Patent Self-righting Surf and Life-Boats," 18 feet in length, during the winter of 1858–59, and found the boat to fully answer all that has been claimed for it by the inventor.

I had ample opportunities of testing the merits of the boat in every respect, and can assure you that I have never seen, used, or heard of one of any other invention that can compare with this.

It is not only a safe boat to land with in a surf, but it is the safest I have ever tried to depart in from the land in a surf; and I found her well adapted to swift rowing, and likewise a good sailing boat. She is easy to manage in a heavy swell; and the men in her soon acquire great confidence in her merits as regards safety in heavy seas, as under other circumstances.

During the coming winter I shall again use her in these waters, and I find that the men of my party rely greatly upon this boat for security in our numerous landings, which we have to make in times of surf.

Very respectfully yours,

T. J. CRAM,

Capt. U. S. Corps Topographical Engineers,
Chief of Primary Triangulation Party on the
U. S. Coast Survey.

James Marks, Esq.,
Agent for Holmes' Patent Surf-Boat,
Philadelphia.

STATEMENTS BY SURFMEN AND BOAT-BUILDERS RESPECTING THE BOATS LATELY SUPPLIED.

No. 1.

THE UNDERSIGNED having examined the boats which were brought here from Tom's River to be placed in the life-stations along our coasts, are desired to express our opinion of them, and of their adaptability to the purposes for which they were intended.

We consider them very poor surf-boats, and no better than our most ordinary whale-boats that have been used for many years upon the coast. They are not self-righting. The model is that of a square-sterned whale-boat. They are built of cedar, of common finish, except in each wing there are air-tanks—say 10 feet long, and 8 inches diameter,—which are under the thwarts, and held by cedar knees (the same as hold the thwarts). They have also tanks of tin, or zinc, in each end. We consider all these air-tight tanks will have a tendency to keep the boat upside-down when capsized, but (being on the inside of the boat) will not prevent her becoming so.

We suppose these air-tanks are below the water-line of the boat, and, if they should be submerged, they are not sufficiently stayed to keep them in their places. We are both carpenters, have built boats, and are accustomed to their management. These two boats were brought here Nov. 6th, 1859.

BENJAMIN HALL,
R. TOWNSEND.

Oceanville, Cape May Co., N. J., Nov. 22, 1859.

No. 2.

We, the undersigned, residents of Cape May County, having many years been engaged in saving life and property wrecked on the sea-coast in this county, feeling a deep interest in the subject, (because we are liable at any time to be called upon to render assistance in cases of shipwreck and distress,) wishing to know the capabilities of the boats recently provided by the General Government, have made an examination of a new boat lately placed in the Station-house No. 24, on the Seven-mile Beach. We find her length 24 feet, depth 2 feet 1 inch, breadth 6 feet 3 inches, sheer or curve 15¾ inches, and rows with 4 oars; has buoyant tanks under the thwarts, and one in each end under the bow and stern boards. We find her to be a very ordinary boat, would cost about *ninety dollars*, and no better than was used on this coast forty years ago, and not what we had reason to suppose would be furnished, when it was understood a new boat was to be adopted.

We therefore very much fear a crew could not be had to risk their lives in her, in times of danger. She is too shallow for our flat coast, where the breakers extend far out from the shore, and, having no self-righting properties, all hands might perish in case of accident. We are also fully satisfied that the tanks are so placed that, should the boat be capsized, they would *hold her in that position*, and she would be entirely useless to the crew. We further believe that, should the boat be filled by shipping a sea, or in any other way, the tanks would have a tendency to turn her over, they (the tanks) being below the water-line.

SAML. SPRINGER,
JOHN W. GANDY.

Cape May, N. J., Nov. 23d, 1859.

COST OF THE FIFTY-FOUR SURF-BOATS.

TREASURY DEPARTMENT, Jan. 9th, 1860.

SIR.—I have the honor to acknowledge the receipt of your letter of the 6th inst., making inquiry, on behalf of a Committee appointed by the Board of Underwriters and Chamber of Commerce of Philadelphia, as to the cost of fifty-four life surf-boats, recently constructed for the New Jersey and Long Island coasts, and, in reply, to say that the price paid was $250 each.

I am, very respectfully,

HOWELL COBB,
Secretary of the Treasury.

HON. JNO. T. NIXON,
House of Representatives.

PROPOSED AS

An Act for the more complete equipment of the Life-Saving Stations on the coasts of Long Island and New Jersey.

Be it enacted, &c., by the Senate and House of Representatives of the United States, in Congress assembled.

SECT. 1. That the Secretary at War be authorized to direct one or more officers of ordnance to design or construct suitable mounted brass guns and projectiles, and to experiment with the same, or with other artillery, in order to ascertain the best apparatus to be furnished to the Life-Saving Stations on the coast, for the purpose of throwing lines from the shore, at long distances, to vessels in distress or suffering shipwreck; and the sum of $ is hereby appropriated for defraying the cost of such experiments, to be disbursed, as may be required, by the Secretary at War.

SECT. 2. That a sum, not exceeding $50,000, or so much thereof as may be necessary, be and is hereby appropriated for disbursement by the Secretary of the Treasury, in accordance with such special recommendations and requisitions as may be made by the Presidents of THE CHAMBER OF COMMERCE OF NEW YORK and of THE PHILADELPHIA BOARD OF TRADE; and upon contracts to be made jointly by them, for the purchase of such mounted brass guns, projectiles, and other apparatus as may be recommended after the experiments hereinbefore mentioned, *together* with the carriages and equipments necessary for the same. *And also* for the purchase of such self-righting life-boats as may be approved of and contracted for by the said Presidents of the Chamber

of Commerce of New York, and the Philadelphia Board of Trade, with wagons for the transportation thereof. *And also* for the purchase and establishment of suitable masts with ladders, or signal-poles, with flags or signals, or other proper means of communication with the land, to give notice of distress or disaster from shipwreck;— *And generally*, to supply any deficiency, and completely to equip each of the fifty-four Life-Saving Stations on the coasts of Long Island and New Jersey with effective apparatus.

SECT. 3. That the salaried keepers of the Station-houses shall be required to live at or near the same. No person shall hold the office of keeper who shall reside at a greater distance than miles from the Station under his charge. It shall be their duty, at proper intervals, to watch the shores in dangerous weather, and to give notice to the land in case of disaster, as may be directed under standing regulations by the Secretary of the Treasury. The life-boat's crews (not exceeding eight in number) shall be exercised to use the boats, guns, life-cars, and apparatus, at least one day in every three months, for which they shall each receive, in full, two dollars per day. In case of actual wrecking service, they shall each receive three dollars per day; and in winter, four dollars for every day fairly and properly occupied in aid of shipwrecked persons. Or, in lieu thereof (at the discretion of the Secretary of the Treasury) they, or, in their absence or default, any volunteers, may each receive a gratuity or reward of any sum not exceeding five dollars per man for every human life safely rescued from a wreck in imminent jeopardy, and wherever such service shall have been attended with serious risk and exposure to the said boat's crew.